Current ASSIST Software Architecture

- PowerBuilder 8.04
- Cynergy Systems EAF 3.0 (modified to work with DB2)
- Java 1.4.2_03
- Context 0.98.3 (editor)
- Macromedia Dreamweaver MX v6.1
- Macromedia Fireworks MX v6.0
- EAServer v4.2.5, EAServer 5.1.0
- DB2 Connect v7.2 Fixpack 9 – soon to be upgraded to DB2 Connect v8
- Subversion 1.2.1 – moving to 1.3.0 (Source Control see below for more information)
- TortoiseSVN 1.2.4 – moving to 1.3.1 (Source Control see below for more information)
- SnagIt v6
- MSXML Parser
- Microsoft Visual C++ Version 6
- Apache avalon-framework, batik, fop, xalan, xerces, xml-apis (used for PDF generation)
- iText Java PDF Library (used for PDF generation)

Developer Machines

- PowerBuilder 8.04
- Cynergy Systems EAF 3.0 (modified to work with DB2)
- Java 1.4.2_03
- Context 0.98.3 (editor)
- Macromedia Dreamweaver MX v6.1
- Macromedia Fireworks MX v6.0
- EAServer v4.2.5
- TortoiseSVN 1.2.4 – moving to 1.3.1
- SnagIt v6
- MSXML Parser
- Apache avalon-framework, batik, fop, xalan, xerces, xml-apis (used for PDF generation)
- iText Java PDF Library (used for PDF generation)
- DB2 Connect Personal Edition 7.2 Fixpack 9 – soon to be DB2 Connect Personal version 8.2
- Windows XP Pro

Source Control Machine/Server

- Production Source Control Host is a Dell Tower GX280
- Test Source Control Host is a Dell GX240
- Centos 4.2 Linux
- Subversion 1.2.1 – moving to 1.3.0
- PostgreSQL 8.1
- Trac 0.9.3
- SQLite3

Application Servers

- Java 1.4.2_03
- Four Dual CPU Windows NT servers running EAServer v4.2.5
- One Quad CPU Windows 2003 server running EAServer v5.1.0
- SnagIt v6
- MSXML Parser
- Apache avalon-framework, batik, fop, xalan, xerces, xml-apis (used for PDF generation)
- iText Java PDF Library (used for PDF generation)
- DB2 Connect 7.2 Fixpack 9 – soon to be DB2 Connect version 8.2

Application framework
The ASSIST application is currently developed as an n-tier application.

- The database tier is comprised of Stored Procedures and Triggers
- The application server tier is comprised of PowerBuilder and Java components
- The front end is comprised of HTML pages, Java Server Pages, and JavaScript
- Page display is for all processes and sub-processes is database driven.
- PowerBuilder datawindows are linked with DB2 Stored Procedures.
- Updates are handled through Wrapper procedures that call validation procedures and table level insert/update procedures.
- Data is stored with active and inactive dates. Data is not deleted from the database it is inactivated. When data is changed the original row is inactivated and a new row is inserted.

Environments
All servers can access all databases.
User identification is accomplished via a reverse-ident query.

- **Development Server**
  - Separate Database DB2 v7 on os390 in development region– to be upgraded to v8 this summer
  - Serves both Web and PowerBuilder components
  - Application Server – EAServer 4.2.5 on Windows NT
  - Single Processor Machine
  - Java 1.4.2_03
  - DB2 Connect v8.2
  - MSXML Parser
  - Apache avalon-framework, batik, fop, xalan, xerces, xml-apis (used for PDF generation)
  - iText Java PDF Library (used for PDF generation)
  - Also hosts development version of Electronic Reports Distribution System (ERD). ERD is a pure Java/JSP application for generation/display of PDF reports

- **Training Server**
  - Separate Database DB2 v7 on os390 in development region– to be upgraded to v8 this summer
  - Serves both Web and PowerBuilder components
  - Application Server – EAServer 4.2.5 on Windows NT
  - Dual Processor Machine
  - Java 1.4.2_03
  - DB2 Connect v8.2
  - MSXML Parser
  - Apache avalon-framework, batik, fop, xalan, xerces, xml-apis (used for PDF generation)
  - iText Java PDF Library (used for PDF generation)

- **QA Server**
  - Separate Database DB2 v7 on os390 in development region– to be upgraded to v8 this summer
  - Serves both Web and PowerBuilder components
  - Application Server – EAServer 4.2.5 on Windows NT
  - Currently shares Training server
  - Java 1.4.2_03
  - DB2 Connect v8.2
  - MSXML Parser
  - Apache avalon-framework, batik, fop, xalan, xerces, xml-apis (used for PDF generation)
  - iText Java PDF Library (used for PDF generation)

- **Forms/Correspondence Server**
  - Separate Database DB2 v7 on os390 in development region– to be upgraded to v8 this summer
  - Serves both Web and PowerBuilder components
  - Application Server – EAServer 4.2.5 on Windows NT
  - Dual CPU Server
  - Java 1.4.2_03
  - DB2 Connect v8.2
  - MSXML Parser
  - Apache avalon-framework, batik, fop, xalan, xerces, xml-apis (used for PDF generation)
  - iText Java PDF Library (used for PDF generation)
  - Also hosts Electronic Reports Distribution System (ERD). ERD is a pure Java/JSP application for generation/display of PDF reports
  - All production letters and forms are generated on this server.

- **Production Servers**
  - Separate Database DB2 v7 on os390 in production region– to be upgraded to v8 this summer
  - Serves both Web and PowerBuilder components
  - Application Server – EAServer 4.2.5 on Windows NT
  - 2 Dual CPU Servers accessed via a DNS round-robin (load balancing)
  - Java 1.4.2_03
  - DB2 Connect v8.2
  - MSXML Parser
  - Apache avalon-framework, batik, fop, xalan, xerces, xml-apis (used for PDF generation)
  - iText Java PDF Library (used for PDF generation)

- **New Server**
  - Separate Database DB2 v7 on os390 in development region– to be upgraded to v8 this summer
  - Application Server – EAServer 5.1.0 on Windows 2003
  - Quad CPU ServerJava 1.4.2_03
  - DB2 Connect v8.2
  - MSXML Parser
  - Apache avalon-framework, batik, fop, xalan, xerces, xml-apis (used for PDF generation)
  - iText Java PDF Library (used for PDF generation)
  - Currently being evaluated for best placement within current servers

Target Environment
- Internet Explorer 5.5 or 6.0 on Windows
- State Application Servers in the Internet Explorer trusted sites
- Access to the state intranet and logged on to the state network

Source Control

- Subversion (SVN) is used for source control of the ASSIST application. SVN is an open source version control system that stores files in a central repository. Among it's most compelling features, SVN allows for checking in and checking out of objects, comparison of object versions, reverting to prior versions of an object, creating branches of code and merging them back together, and tagging of a collection of code. See http://svnbook.red-bean.com/nightly/en/svn-book.html#svn.intro.whatis for more information.

- Each developer has a local copy of the subversion repository on their machine in c:\checkout. This location includes all source code (stored procedures, Java, JSP, html, images, PowerBuilder objects, and 3rd party controls). Source code is checked in and checked out of this local copy. Actual development is accomplished in the C:\ASSIST directory. For existing PowerBuilder objects, developers only check in the exports of the objects. For new PowerBuilder objects, developers check in the libraries, workspaces, and exports. Interaction with the source code is accomplished via TortoiseSVN, a windows graphical interface to the SVN repository.

- The configuration manager (CM) compiles all changes for a given build. The CM is responsible for updating the PowerBuilder object libraries after changes have been compiled. The CM is also responsible for baselining each release so that the exact source used for a given release is available.

- At any time a developer may check out the latest version of the source code.

TRAC – Ticket Tracking Application

- The issue tracking system ASSIST utilizes is Trac. Trac is an open source web based issue tracking and wiki software written by Edgewall Software. Key features of Trac are ticket categorization, ticket prioritization, data storage in Sqlite for ad hoc query capabilities, and the ability to link tickets to SVN changesets. The linking is between both source code and ticket to allow for easy cross-referencing. Additional information is available at http://projects.edgewall.com/trac.

- Tickets follow the standard change management process.

- All code check-ins include the ticket they are associated with and all tickets that have code changes include the source code changeset.